

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (currently amended). An apparatus for use in a building automation system, the building automation system including one or more devices that are operable to generate control outputs based on set point information and process value information from one or more sensors, the building automation system further including one or more actuators operable to perform an operation responsive to at least some of the control outputs, the apparatus comprising:

at least one microelectromechanical (MEMs) sensor device operable to generate a process value;

a processing circuit operable convert the process value to an output digital signal configured to be communicated to another element of a the building automation system, the building automation system including one or more devices that are operable to generate control outputs based on set point information and process value information from one or more sensors; and

wherein the at least one MEMs sensor device and the processing circuit are integrated onto a first substrate; and

wherein the processing circuit is further operable to generate a first control output based on at least one set point and the process value obtained from the at least one MEMs

sensor device, and wherein the output digital signal is representative of the first control output.

Claim 2 (currently amended). The apparatus of claim 1 wherein the processing circuit includes a microelectronics A/D converter, the microelectronics A/D converter operable to receive the process value from the at least one MEMs sensor device and generate a digital sensor signal therefrom.

Claims 3-4 (canceled).

Claim 5 (original). The apparatus of claim 1 wherein the at least one MEMs sensor device includes a plurality of MEMs sensor devices.

Claim 6 (original). The apparatus of claim 1 further comprising a battery secured to the first substrate.

Claim 7 (original). The apparatus of claim 1 wherein the first substrate is a semiconductor substrate.

Claim 8 (original). The apparatus of claim 6 wherein the battery further comprises a lithium ion battery layer.

Claim 9 (original). The apparatus of claim 8 further comprising a power management circuit operably coupled to the lithium ion battery layer.

Claim 10 (original). The apparatus of claim 8 further comprising a second substrate, and wherein the lithium ion battery layer is disposed between the first substrate and the second substrate.

Claim 11 (original). The apparatus of claim 1 further comprising an RF communication circuit operably coupled to the processing circuit.

Claim 12 (original). The apparatus of claim 1 further comprising an EEPROM operably coupled to the processing circuit.

Claims 13-20 (canceled).

Claim 21 (new). An apparatus for use in a building automation system, the building automation system including one or more devices that are operable to generate a control output based on set point information and process value information from one or more sensors, the apparatus comprising:

at least one microelectromechanical (MEMs) sensor device operable to generate a process value;

a processing circuit operably connected to the at least one MEMs sensor device to receive the process value therefrom, the processing circuit operable to convert the process value to an output digital signal configured to be communicated to another element of the building automation system;

a battery operably connected to provide power to at least the processing circuit; and wherein the at least one MEMs sensor device and the processing circuit are integrated onto a first substrate, and wherein the battery is secured to the first substrate.

Claim 22 (new). The apparatus of claim 21 wherein the first substrate is a semiconductor substrate.

Claim 23 (new). The apparatus of claim 22 wherein the battery further comprises a lithium ion battery layer.

Claim 24 (new). The apparatus of claim 23 further comprising a power management circuit operably coupled to the lithium ion battery layer.

Claim 25 (new). The apparatus of claim 23 further comprising a second substrate, and wherein the lithium ion battery layer is disposed between the first substrate and the second substrate.

Claim 26 (new). An apparatus for use in a building automation system, the building automation system including one or more devices that are operable to generate a control output based on set point information and process value information from one or more sensors, the apparatus comprising:

at least one microelectromechanical (MEMs) sensor device operable to generate a process value;

a processing circuit operably connected to the at least one MEMs sensor device to receive the process value therefrom, the processing circuit operable to convert the process value to an output digital signal configured to be communicated to another element of the building automation system;

a programmable non-volatile memory operably coupled to the processing circuit; and wherein the at least one MEMs sensor device and the processing circuit are integrated onto a first substrate.

Claim 27 (new). The apparatus of claim 26, wherein the programmable non-volatile memory comprises an EEPROM.

Claim 28 (new). The apparatus of claim 26, wherein the programmable non-volatile memory is further operable to store configuration information relating to the apparatus.

Claim 29 (new). The apparatus of claim 28, wherein the configuration information includes identification information for the apparatus.

Claim 30 (new). The apparatus of claim 29, wherein the configuration information includes a network address corresponding to the apparatus.

Claim 31 (new). The apparatus of claim 28, wherein the configuration information includes function enabling information.

Claim 32 (new). The apparatus of claim 28, wherein the configuration information includes system RF communication parameters.

Claim 33 (new). The apparatus of claim 27, wherein the EEPROM is further operable to store configuration information relating to the apparatus.

Claim 34 (new). The apparatus of claim 33, wherein the configuration information includes identification information for the apparatus.

Claim 35 (new). The apparatus of claim 33, wherein the configuration information includes function enabling information.

Claim 36 (new). The apparatus of claim 27, wherein the EEPROM is integrated on to the first substrate.